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Dear Sir:

A symposium on "Management Problems in the Industrial Application of Radioisotopes" will be a two day section of the first advanced course in industrial uses of radioisotopes to be given at Oak Ridge, Tenn., April 20-May 1. The symposium will include: dealing with the USAEC (contracts, products obtainable, and other services), legal problems encountered in radioisotope use, insurance problems, public relations, the role of consulting laboratories, safety and procurement of radioisotopes, and the equipping and staffing of radioisotope laboratories. The main sections of the industrial course will offer instruction in such techniques as wear studies, gauging procedures and devices, radiography, isotope marking processes, industrial processes, chemical reaction studies, analytical chemistry applications, isotopes in the biological industries, textile and laundering problems, instrumental developments, and industrial radiography. An advanced course in autoradiography will also be given at Oak Ridge June 15-26, while three basic courses in radioisotope techniques will be given June 8, July 6, and August 10.

The action of ionizing radiation on biological and pharmaceutical products will be discussed by experts from government, industry and the universities at a symposium to be sponsored by the Institute of Polymer Research, Brooklyn Polytechnic Institute, on February 7. Dr. Wolfgang Huber, vice-president in charge of research at Electronized Chemicals Corp., is the symposium chairman. Glenn C. Bond, Upjohn Co., will discuss "Sterilization of Drugs and Biological Products"; W. Dexter Bellamy, General Electric, will cover "Effects of Ionizing Radiation on Enzymes"; Elmer L. Gaden, Jr., Columbia University, will cover "Effects of Gamma Rays on Systems of Biological Importance"; Nathan C. Kirsch, Schering Corp., will discuss "Potential Uses of Ionizing Radiation in the Pharmaceutical Industry", and Ernest C. Pollard, Yale University, will cover "Fundamental Aspects of the Biological Effects of Ionizing Radiation".

Some 78 grants, covering $685,200, in the biological and physical sciences, have now been approved by the National Science Foundation, that organization announced in Washington last week. One study, to be made under an NSF grant, will be by H. S. Sweet, Department of Civil Engineering, University of Wyoming, who will investigate the application of nuclear radiations to properties of engineering materials. Another investigation, under an NSF grant, will be made by L. D. Wyly, Department of Physics, Georgia Institute of Technology, Atlanta, Ga., on the angular correlation between nuclear radiations.

Adoption of a national program to ensure production continuity in an atomic war has now been urged by the San Francisco Bay Area (Calif.) industrial community, in a report submitted in the last fortnight to the National Security Resources Board. The report (prepared with the staff assistance of Stanford Research Institute) places emphasis on the importance of local autonomy in any organization for post-attack industrial recovery.

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BUSINESS NEWS...in the nuclear energy field...

Survey Shows Nuclear Instrument Business Growth: Doing an annual business volume of approximately $ 20 million in 1952, and employing more than 2,400 persons, the radiation instrument industry has before it an expanding market, a recent USAEC survey shows. This expanding market exists outside the USAEC program, as well as within the USAEC installations, it is shown. Now, military agencies of the Government provide about 50% of the total market, the USAEC and its principal contractors provide about 30% with the remainder accounted for by private industry, universities, hospitals, research institutes, civil defense requirements, export, and uranium ore prospecting. This survey is believed to cover more than 90% of the radiation instrument industry in terms of business volume. It reveals that seven companies, with probable business volume in excess of $1 million each, in 1952, accounted for about 50% of the industry's activity. (More than 50 patents in the field of radiation instruments are owned by the U. S. Government and held by the USAEC. Some 51 non-exclusive, royalty-free licenses have been granted on these patents. Applications for such licenses are made to the Patent Branch, USAEC, Washington 26, D. C.)

Operating Contractor Selected for Computing Center: A computing center, which will be established in New York City to serve the needs of the USAEC installations and contractors in the northeastern U. S., will have New York University as the operating contractor. The center's initial computing machine will be the UNIVAC #4, built for the USAEC by the Eckert-Mauchly Div., Remington-Rand, Inc. The University will provide a building for the machine, which will be moved, under present plans, about the 15th of March, from the Eckert-Mauchly plant in Philadelphia. Under the terms of the cost reimburseable contract, cost of staffing the center, as well as the purchase, operation, and maintenance of the equipment will be borne by the USAEC. It is believed that the UNIVAC and its associated equipment, which was purchased at a total cost of $880,000, will greatly facilitate the analysis of problems in nuclear and reactor research which are of such mathematical complexity that computation by ordinary means is all but impossible.

Promising Future in Radiation Work for Zirconium Predicted: Ziroconium is "practically the perfect material of construction for nuclear reactors" Dr. Clyde Williams, Battelle Memorial Institute, Columbus, O., recently pointed out. Its characteristics (he said) which make it thus suitable are its extremely low neutron-absorbing qualities. Now, the USAEC has a priority on all present production of zirconium, and is anzious to see the metal declared openly available for industry. An ample supply of zircon, the mineral from which zironium is made, can support such a development, he stated. (The United States supply of zircon comes chiefly from beach-sand deposits in Florida; it is also imported from India and Australia.)

Airborne Radiometric Surveys Being Made: To determine the amount of uranium minerization in the ground near Mauch Chunk, Pa., airborne radiometric surveys in the vicinity of that town are now to be made. In the course of the surveys, light aircraft carrying radiation detection instruments will cover the general area north and south of Mauch Chunk. The flights are being carried out under contract to the USAEC by Safair Flying Services, Inc., Teterboro, N. J. Uranium mineralization has been known in the Mauch Chunk area of Pennsylvania since 1874. Recently, additional occurrences have been found, but the extent and commercial importance, if any, of these occurrences is not known. The airborne surveys will show whether further Government exploration is warranted.

PEOPLE...in the nuclear energy program...

Clark E. Center has now been appointed vice-president in charge of atomic energy work of Union Carbide & Carbon Chemicals Co., succeeding Dr. George T. Felbeck.

Dr. O. Kenton Neville, who has been with the atomic energy project at Oak Ridge since 1944, has now joined the technical division of Nuclear Instrument & Chemical Corp., Chicago.

Dr. George A. Kolstad, physicist with the USAEC in Washington since 1950, has been appointed chief of the Physics and Mathematics Branch in the USAEC's research division.

Mr. F. W. Gridley has now been elected to the board of directors of Radioactive Products, Inc., Detroit, Mich.

RAW MATERIALS...radioactive minerals for nuclear work...

UNITED STATES-Edgemont, S. D.: Interest in the uranium fields of Craven Canyon, north of Edgemont, has now been shown by several firms who have staked claims there: Union Carbide & Carbon has filed 40-claims; Homestake Mining, 18-claims; and U. S. Vanadium, 4 lode location notices. (This latter company is licensed by the USAEC to buy uranium, and has shipped approximately 3,000 tons of ore from this area during the past year to its Rifle, Colorado plant for refining.). Meanwhile, a diamond core and non-core drilling is underway in this area. It is to cover a minimum of 10,000 and a maximum of 20,000-ft., in a 4 to 6 mile area, under USAEC and U.S. Geological Survey sponsorship.....Salt Lake City, Utah: Vitro Chemical Co. (Div. of Vitro Corp. of America) has doubled the capacity of its uranium ore reduction plant during the past year, according to W.B. Hall, plant superintendent. Autunite ore for the mill comes from Utah's Marysvale district, largely from Vanadium Corp. of America and Bullion Monarch Mining Co. Asphaltic ores are shipped to the mill from Emery county's Temple Mountain district, with Consolidated Uranium Co. among the shippers.....Moab, Utah: Utex Exploration Co., Inc., has completed its 73-ft. shaft down to a body of pitchblende, which is said to the first finding of this mineral in the area. According to an essay report from the original drilling here, the ore ran 5.08% uranium oxide and 9.81% vanadium oxide. .....Townsend, Mont: A report has been made of the discovery of a large deposit of uranium ore on the west side of the Missouri, near Townsend. The ore is said to be high grade, according to M. E. Toney, and F. P. Nash, owners.....Grand Junction, Colo.: Additional lands in Colorado and Utah have been segregated from the public domain, at the USAEC's decision to explore there for uranium minerals. Lands affected lie in Montrose County, Colo., and San Juan and Emery counties in Utah.

CANADA- An increase in the authorized capital, from 3-million to 5-million shares, is now planned by Gunnar Gold Mines, according to president Gilbert A. LaBine. Mr. LaBine told shareholders that Gunnar wishes to acquire two additional groups of claims, now owned by a syndicate, in the St. Mary's Channel area. He said that exploration has showed exceptionally encouraging results. Now, he said, funds from the stock increase are needed to consumate this acquisition.....Also, in the St. Mary's Channel area, a 13-claim uranium prospect has been purchased by Silver Jackpot Mines. Surface exploration, to be followed by diamond drilling, is tentatively slated to start in the Spring, according to company officials.....Two new uranium prospects, in the Lake Athabaska area, Northern Saskatchewan, have now been purchased by Homer Yellowknife Mines, that firm advises. Plans are now being worked out for exploration, company officials state.

BOOKS & OTHER PUBLICATIONS...in the nuclear field...

Experimental Nuclear Physics, edited by E. Segre, University of Calif. Detection methods are covered by Hans H. Staub; Passage of radiations through matter by Hans A. Bethe, and Julius Ashkin; Nuclear moments and statistics, nuclear two-body problems and elements of nuclear structure by Norman F. Ramsey; and relative isotopic abundance of the elements, atomic masses, and charged particle dynamics and optics by K. T. Bainbridge. (This comprises Vol. 1, to be issued by the publisher in March, with approximately 776 pages.).....Volume 2, to be issued in April, will contain A Survey of Nuclear Reactions, by Philip Morrison, and The Neutron, by Bernard Feld. It will contain approximately 470 pages.....Volume 3 is now in preparation, according to the publisher.-John Wiley & Sons, Inc., New York 16, N.Y. (Vol. 1, $14. Vo. 2, $9).

NOTE: The following publications, of the Atomic Energy Research Establishment, (AERE), Harwell, Eng., are obtainable from British Information Services, 30 Rockefeller Plaza, New York 20, at prices shown: (1) Application of electronics to the detection and measurement of radioactivity; a course of six elementary lectures. 82 pages. $2.50. (2) Fast scale of ten scaler. 37 pages. $1.25. (3) Analysis of uranium-tantalum and uranium-niobium alloys. 15 pages. 65¢ (4) Focusing system for the elctrostatic generator. 21 pages. 90¢. (5) Bibliography on Americium. 6 pages. 35¢. (6) Boron trifluoride for neutron detection. 52 pages. $1.25 (7) Effect of pile irradiation on the emanating power of alumina. 4 pages. 30¢. (8) Energy flux and average energy of neutrons scattered by the walls of a laboratory. 15 pages. 65¢. (9) Extraction of phosphorous-32 from pile-irradiated sulfur. 8 pages. 40¢. (10) Use of tetra ethylene glycol as a spreading agent in preparing uniform plutonium sources 3 pages. 30¢.

AT ATOMIC CITIES & CENTERS...in the United States...

Hanford Plutonium Works, Richland, Wash.: While emphasizing that for safety reasons no towns or cities should be located within 25 miles of the Hanford area, the USAEC has now released from previous restriction some 87,000 acres at the extreme east and weat ends of the Wahluke Slope, across the Columbia River from the Hanford plutonium production plant. Should farm families settle on these newly-released lands, an adequate evacuation plan, now to be formulated, will assist them in the event of an emergency. The risk of hazard, in these newly-released lands, continues to be very great, the USAEC stated. The real danger, the Commission stated, in the operation of the Hanford plant, exists in the remote possibility that one or more of the nuclear chain reacting piles in which plutonium is produced may go out of control. If any of the reactors ever go completely out of control (which the USAEC described as unlikely) dangerous amounts of radioactivity would be released to the atmosphere. The radio-active cloud which would then be produced by the melting fuel elements would most probably pass over part of the Wahluke Slope. The factors involved in the newly-released land decision were considered by the USAEC's industrial committee on reactor location problems made up of: C.R. McCullough, Monsanto Chemical Co.; D.A. Rodgers, Allied Chemical & Dye Corp.; Reuel C. Stratton, Travelers Insurance Co.; R.L. Doan, Phillips Petroleum Co.; Willard P. Conner, Jr., Hercules Powder Co.; and Kenneth R. Osborn, Allied Chemical & Dye Corp.

Oak Ridge, Tenn.: For the first time, land at Oak Ridge will be leased for private construction of homes. The homes may be built by individuals, or developers, and may either be sold or rented. Some 550 housing units have been approved for the area under Title IX, of the National Housing Act.

NEW PRODUCTS, PROCESSES, & INSTRUMENTS...for nuclear work...

FROM THE MANUFACTURERS-New sample spinner, Model PM-1 is designed to speed sample preparation--one of the most time consuming radiolaboratory operations. The basic unit consists of a constant speed turntable which rotates sample pans up to 2" in diameter at a rate of 20rpm. The operator spreads the sample material on the rotating sample pan with a pipette or syringe, in less time (the manufacturer states) than was required previously. An air drier attachment, Model PM-2, can be attached to aid in drying the sample material. Provision is made for connecting a compressed gas supply so that the air or gas is directed downward and across the sample from a thin slot running completely around the inner periphery of the "air ring". An additional attachment, Model PM-3, holds an infra-red lamp over the turntable as an alternative sample drying method.--Nuclear Instrument & Chemical Corp., Chicago 7, Ill.

NOTES: The "Development of a Radioactive Source for a Training Aid" (an 18-page report) covers this training aid which was developed for the U.S. Army to be used primarily for the calibration of survey instruments. The training aid consists of an encapsulated and standardized cobalt-60 source of 80 to 120 mc, a cylindrical lead shield which is permanetly fastened in a 3/4 -in. plywood carrying case, and a mechanical remote control handling device. (Work done at by U.S. Chemical Corps.)

"Low Voltage Self Quenching Geiger Counters" (a 10-page report) deals with studies conducted of such counters. The life times of these counters in terms of total count; pulse size, efficiency and quenching characteristics; percentages of halogens required to make good counters; were some of the investigations conducted. (Work done at U. S. Naval Research Laboratory).

"Evaluation Studies of Colorimetric and Conductrimetric Dosimeters" (10 page report) covers work done by Distillation Producrs Industries, Eastman Kodak Co., Rochester, N.Y.

"Determination of Small Amounts of Metals in Oils and Fuels by X-ray Absorption" (a 34 page report) covers a method for the rapid determination of metallic particles in hydrocarbons. The method used consists of generating X-rays in a molybdenum target tube and the subsequent detection of them by a Geiger counter tube after passing through an absorption cell containing the sample. (Work done at U.S. Naval Research Laboratory.)

The above reports may be obtained from the Library of Congress, Publication Board Project, Washington, D.C., in either microfilm or photostat form.

ATOMIC PATENT DIGEST...latest U. S. grants...

Ballistic electrometer. The method of continuously measuring and recording small ion currents with an ionization chamber circuit having in series an ionization chamber, a constant potential power source, and a high impedance. Comprises (in part) the steps of repetitively connecting the ionization chamber across the power source to charge the chamber; disconnecting the ionization chamber from the power source and electrically isolating the chamber from other electrical elements for a constant period of time; and connecting the ionization chamber, high impedance and power source in a series circuit. U. S. Pat. No. 2,624,847 issued Jan. 6, 1953; assigned to United States of America (USAEC).

Arc hash analysis; by cathode-ray tube, in appropriate electronic circuitry. U. S. Pat. No. 2,624,860 issued January 6, 1953; assigned to United States of America (USAEC).

Film badge dosimeter. A radiation meter comprising (in part) echelon type filter means, including an open window region, arranged to filter the radiations reaching the x-ray film used. The aborption characteristics of this filter means and the energy response characteristics of the film are so correlated that the densities of at least some one pair of the regions of the film are readable and their ratio uniquely determines the effective energy of the radiation at each point within the range of energies and dosages which it is desired to measure. U. S. Pat. No. 2,624,846 issued January 6, 1953 to E. Tochilin, San Francisco, and R. H. Davis, Albany, Calif.

Electrodepositing nickel. Method of producing finely divided nickel having a mean particle size between 7 and 15 microns, by electrodeposition from a solution containing nickel, ammonium, and sodium ions in the respective approximate proportions of 0.1 to 1.0 to 1.0 U. S. Pat. No. 2,625,507 issued January 13, 1953; assigned to United States of America (USAEC).

Coincidence circuit. Comprising (in part) the combination of a photomultiplier tube, having a cathode, a plurality of dynodes, and an anode, a source of light disposed adjacent to the cathode, a plurality of series-connected resistors having one end connected to this cathode, and means whereby maximum current flows at this anode when the light and the maximum value of the recurring voltage occur simultaneously. U. S. Pat. No. 2,625,653 issued January 13, 1953; assigned to United States of America (USAEC).

Rate meter. Apparatus for measuring the rate of occurrence of a predetermined number of radioactive emanations. Includes (in part) means for counting the predetermined number of radioactive emanations, a tape calibrated to indicate the rate at which the radioactive emanations occur, and means operative during the count of these emanations to drive the tape until the predetermined number of radioactive emanations has been counted. U. S. Pat. No. 2,625,656 issued January 13, 1953; assigned to Bendix Aviation Corp., Detroit, Mich.

Monitoring gas for radioactive xenon. An ionization chamber for monitoring the activity of a gas passing there through. Includes (in part) two electrodes insulated from one another, a source of direct voltage, and means whereby the gas being monitored must pass over the surface of one electrode, and a directly grounded conducting member adjacent thereto. U. S. Pat. No. 2,625,657 issued January 13, 1953; assigned to United States of America (USAEC).

Method of making zirconium tetrachloride. Comprises (in part) heating a mixture of zirconium tetrachloride and magnesium chloride to vaporize the former therefrom, and condensing the vapors to recover solid zirconium tetrachloride. U. S. Pat. No. 2,626,203 issued January 20, 1953; asigned to United States of America (USAEC).

Method of polymerizing trifluorochloroethylene. Comprise (in part) maintaining a compound selected from the group consisting of completely halogen substituted acetyl halides and a completely halogen substituted acetic acid anhydrides, in solution in trifluoromonochloroethylene, in contact with an inorganic metal peroxide, to produce the peroxide of this compound, and decomposing this peroxide while in contact with the trifluoromonochloroethylene, thereby causing the latter to polymerize. U. S. Pat. No. 2,626,254 issued January 20, 1953; assigned to United States of America (USAEC).

Sincerely,

The Staff
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